

MICHIGAN ENVIRONMENTAL SCIENCE BOARD RESOURCE GUIDE



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Publications List

Michigan Environmental Science Board
Constitution Hall, 6th Floor South
P.O. Box 30680
Lansing, Michigan 48909-8180

February 2005

MICHIGAN ENVIRONMENTAL SCIENCE BOARD

Joan B. Rose, Ph.D.Chair
Michael J. Barcelona, Ph.D.Member
Constance Boris, Ph.D.Member
Raymond Y. Demers, M.D.Member
Norbert Kaminski, Ph.D.Member
Gerald P. Keeler, Ph.D.Member
David T. Long, Ph.D.Member
Nicholas Mercuro, Ph.D.Member
Bette J. Premo, Ph.D.Member
Keith G. Harrison, M.A., R.S., Certified Senior Ecologist.....Executive Director

SUPPORT STAFF:

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Keith G. Harrison, M.A., R.S., Certified Senior Ecologist.....Special Projects Coordinator
Linda Albro Sparks.....Executive Secretary

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STATE OF MICHIGAN

JENNIFER M. GRANHOLM
GOVERNOR

MICHIGAN ENVIRONMENTAL SCIENCE BOARD
LANSING

KEITH G. HARRISON
EXECUTIVE DIRECTOR

OVERVIEW

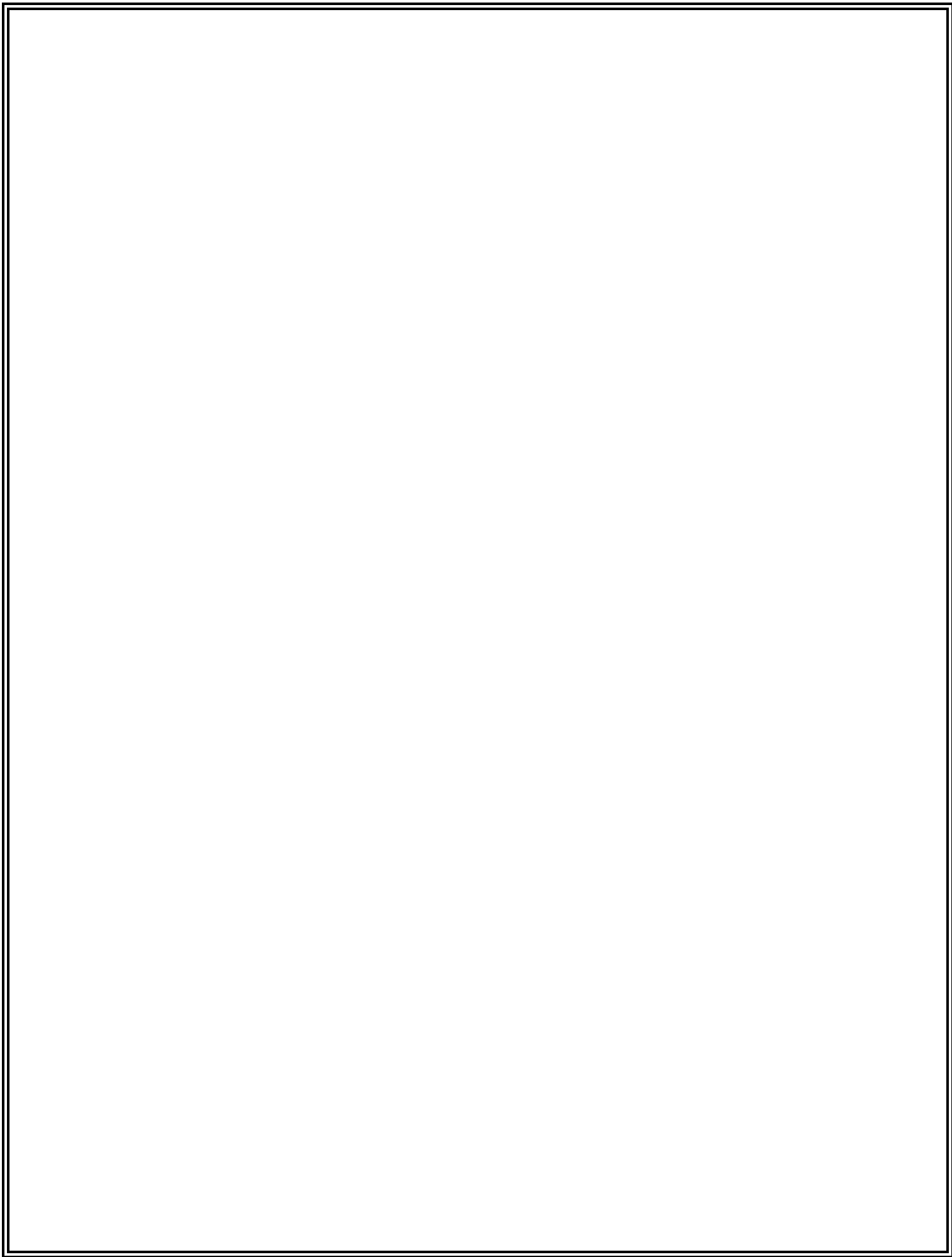
The Michigan Environmental Science Board (MESB) was created August 6, 1992, as an independent autonomous agency through Executive Order 1992-19. The MESB is charged with providing the Governor of Michigan, and state agencies at the Governor's request, with sound scientific and technical expertise on matters relating to environmental protection and natural resources management. The MESB is neither a state policy body nor an advocate for or against any particular environmental or public health concern.

The MESB consists of an executive director and nine members, appointed by the Governor, who have expertise in one or more of the following areas: engineering, ecological sciences, chemistry, physics, toxicology, biological sciences, human medicine, statistics, risk management, geology, economics, and other disciplines as necessary. Upon receipt of a request from the Governor to investigate a given topic or issue, a panel is convened of MESB members with appropriate expertise and outside guest scientists as needed.

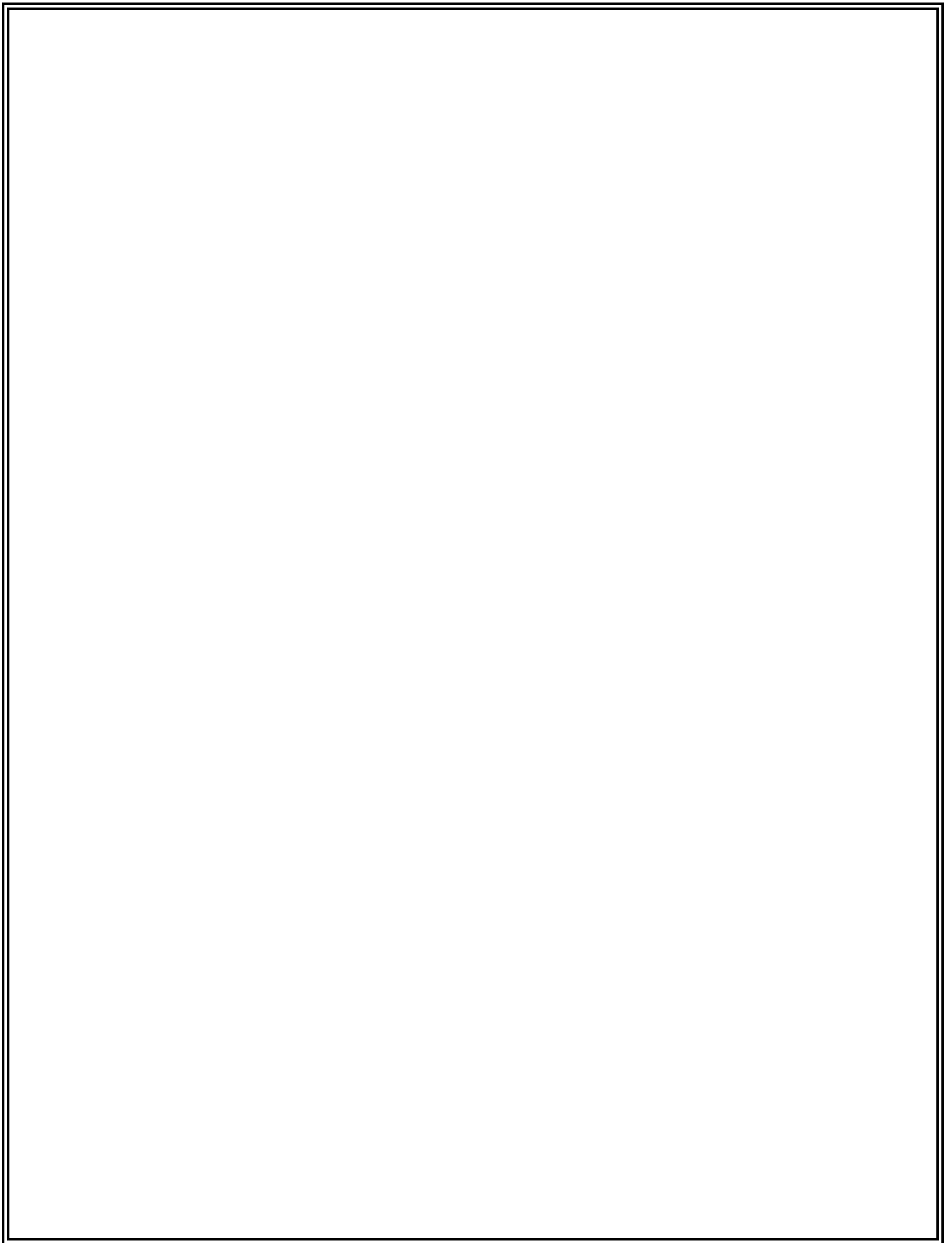
Eighteen science reports have been published to date by the MESB. The MESB has:

1. Investigated the human health and environmental impacts of mercury, chlorine, and lead contaminants and the causes of massive weed growth and elevated bacteria populations in Lake St. Clair;
2. Evaluated the efficacy and impact of an aquatic herbicide, the use of indoor air inhalation generic cleanup criteria at sites of environmental contamination, the risk of cancer among firefighters, and the human health impact of low-level hydrogen sulfide exposure;
3. Evaluated Michigan's low-level radioactive waste isolation facility siting criteria, Michigan's fish advisory program, the impact of directional drilling on the Great Lakes, the USEPA's particulate matter and ozone regulations, the scientific validity of the state's proposed list of contaminants to be biomonitoring in humans, and the state's environmental standards as they relate to children's health; and
4. Evaluated the efficacy of a proposed uniform fish advisory for use with the Great Lakes and the scientific soundness of a list of proposed environmental indicators to be used to assess the overall state of the natural environment in Michigan.

Copies of all MESB reports and panel meeting summaries are available free of charge by either writing to the MESB or downloading from the Michigan Environmental Science Board's Internet Home Page at: <http://www.michigan.gov/mesb>.



Michigan Environmental Science Board
Executive Order 1992-19
August 6, 1992





STATE OF MICHIGAN
OFFICE OF THE GOVERNOR

JOHN ENGLER
GOVERNOR

EXECUTIVE ORDER
1992-19

MICHIGAN ENVIRONMENTAL SCIENCE BOARD

WHEREAS, there is a need for the Governor and others in state government to have the advantage of scientific and technical expertise with respect to important matters relating to environmental protection and natural resources management; and

WHEREAS, it is therefore necessary to create a Michigan Environmental Science Board as an independent autonomous entity within the Department of Management and Budget.

NOW, THEREFORE, I, John Engler, Governor of the State of Michigan, pursuant to the powers vested in me by the Constitution of the State of Michigan of 1963, do hereby establish as an independent, autonomous entity within the Department of Management and Budget a Michigan Environmental Science Board (the "Board").

1. The Board shall consist of nine individuals who have expertise in one or more of the following areas:

- a. Engineering
- b. Ecological Science
- c. Economics
- d. Chemistry
- e. Physics
- f. Biological Sciences
- g. Human Medicine
- h. Statistics
- i. Risk Assessment
- j. Geology
- k. Other disciplines as necessary

2. A member of the Board shall be appointed by the Governor and shall serve for a term of three years except that of the members first appointed. Three shall serve for a term of three years, three shall serve for a term of two years and three shall serve for a term of one year and providing that the Governor may remove a member of the Board at any time, with or without cause and with or without prior notice. The Governor shall appoint one member of the Board as Chairperson and such member shall serve as Chairperson at the pleasure of the Governor. The Governor may appoint other members of the

Board as officers and such members shall serve as officers at the pleasure of the Governor. The Board shall be administered by an executive director who shall be appointed by the Governor.

3. The Board shall have the following general duties:

- a. To advise the Governor, the Commission of Natural Resources, the Michigan Department of Natural Resources and other state agencies on issues affecting the protection and management of Michigan's environment and natural resources, as may be requested by the Governor.
- b. To assist the Governor in reviewing state or federal environmental impact statements and to coordinate the reviews of other state agencies.
- c. To review the establishment of new environmental standards for permits or operating licenses, as may be requested by the Governor.
- d. To review the methodology for establishing permit or operating license conditions that contain environmental standards that have not been established by administrative rule, as may be requested by the Governor.
- e. To review staff recommendations for the approval or denial of permit and license applications, as may be requested by the Governor.

4. The Board shall have the following specific duties:

- a. Upon receipt of a request from the Governor to review a particular issue, the executive director of the Board shall convene a portion of the Board, consisting of Board members with relevant expertise, to provide recommendations on the issue.
- b. Upon receipt of an environmental impact statement from the Governor, the executive director of the Board shall convene a portion of the Board, consisting of Board members with relevant expertise, to review the environmental impact statement. The executive director shall also coordinate the review by other state agencies of the environmental impact statement.
- c. Upon request by the Governor, the director of the Michigan Department of Natural Resources shall submit proposed or existing environmental standards for permits or operating licenses to the Board. (For purposes of this Order, a standard shall include, but shall not be limited to, a proposed or existing rule, regulation, guideline, form with instructions or policy.) Upon receipt of a standard, the executive director shall convene a portion of the Board, consisting of Board members with relevant expertise, to review the standard. The scope of the review by the Board shall include, but shall not be limited to the following factors: (i) sound, objective, scientific reasoning; (ii) relative risk

to human health and to the environment; and (iii) economic reasonableness, where appropriate. The Board shall report its findings to the director of the Michigan Department of Natural Resources. Upon receipt of the Board's findings, the director may propose modifications to the standard. Such review shall be conducted concurrently with any rule-making proceeding and shall not delay such proceeding.

d. Upon request by the Governor, the Board shall review the procedure for establishing permit or operating license conditions that contain environmental standards that have not been established by rule. Upon receipt of such a request, the executive director shall convene a portion of the Board, consisting of Board members with relevant expertise, to review the procedure. The scope of the review by the Board shall include, but shall not be limited to the following factors: (i) sound, objective, scientific reasoning; (ii) relative risk to human health and to the environment; and (iii) economic reasonableness, where appropriate. The Board shall report its findings to the director of the Michigan Department of Natural Resources. Upon receipt of the Board's findings, the director may propose modifications to the procedure for establishing the permit or license conditions.

e. Upon request by the Governor, the Board shall review staff recommendations for denial or approvals of permit and license applications. Upon receipt of such a request, the executive director shall convene a portion of the Board, consisting of Board members with relevant expertise, to review the recommendations of the staff. The scope of the review by the Board shall include, but shall not be limited to the following factors: (i) sound, objective, scientific reasoning; (ii) relative risk to human health and to the environment; and (iii) economic reasonableness, where appropriate. Upon receipt of the Board's findings, the director shall make the final determine as to whether to approve or deny the application, taking into account the recommendations of the Board. The director may modify permit or license conditions consistent with the recommendations of the Board.

5. The Commission of Natural Resources, the director of the Michigan Department of Natural Resources and other department directors and autonomous agency heads may request the Governor to request the review by the Board of a matter.

6. As appropriate, the Board may make inquiries, studies and investigations, hold hearings and receive comments from the public. As appropriate, the executive director may call upon experts who are not members of the Board to assist the Board in its various deliberations.

7. All departments, boards, commissions or officers of the state, or of any political subdivision thereof, shall give to the Board, or to any member or representative thereof, any necessary assistance required by the Board, or any member or representative thereof, in the performance of the duties of the Board so far as is

compatible with its, his or her duties; free access shall also be given to any books, records or documents in its, his or her custody, relating to matters within the scope of the inquiry, study or investigation of the Board.

8. Executive Order 1991-33 is hereby rescinded.

The provisions of this Executive Order shall become effective upon the filing of this Order.



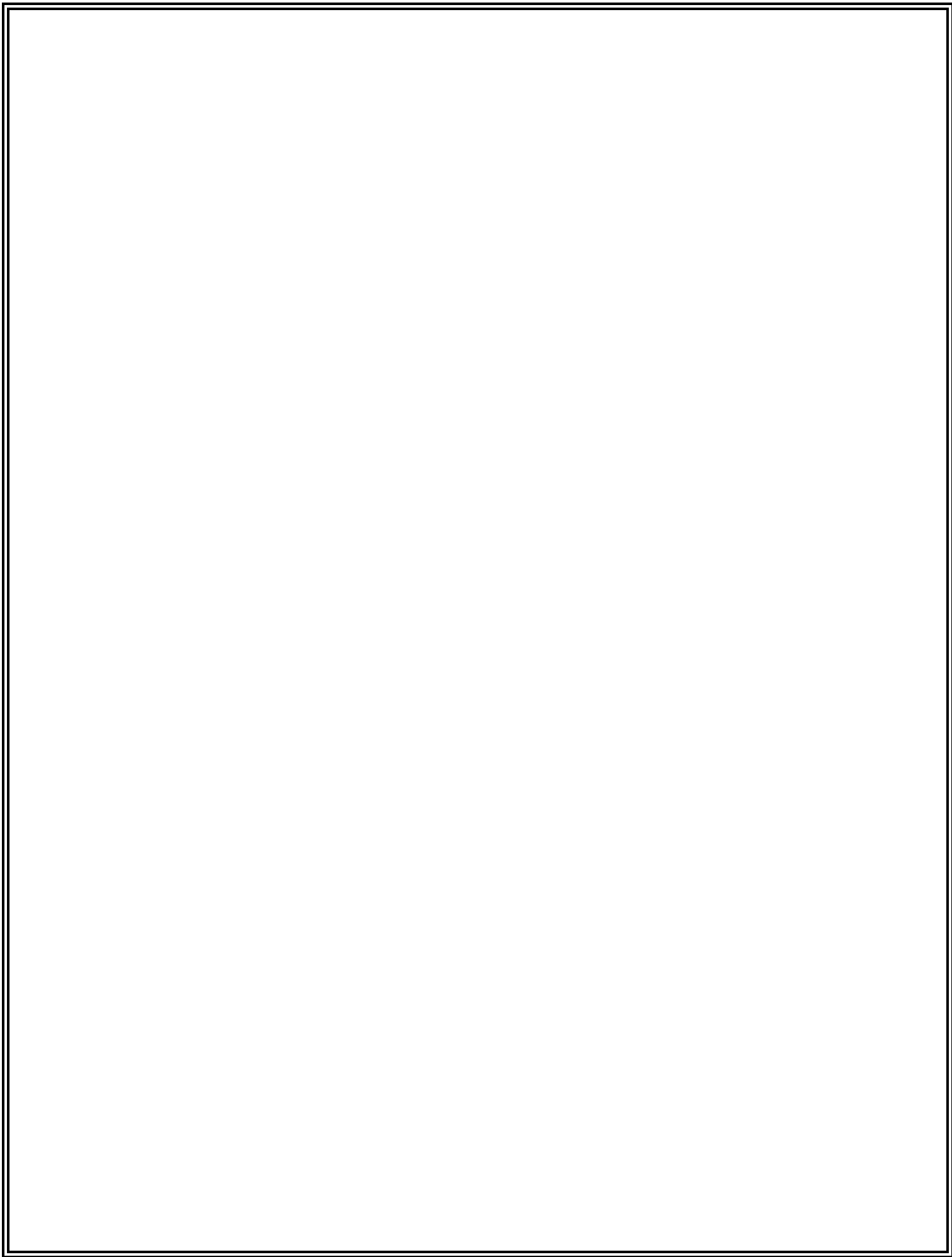
Given under my hand and the Great Seal of the State of Michigan this 6th day of August, in the Year of our Lord, One Thousand Nine Hundred Ninety-Two, and of the Commonwealth, One Hundred Fifty-Six.

/s/ John Engler
GOVERNOR

BY THE GOVERNOR:

/s/ Richard H. Austin
SECRETARY OF STATE

Michigan Environmental Science Board
Executive Order 1997-3
March 14, 1997





STATE OF MICHIGAN
OFFICE OF THE GOVERNOR

JOHN ENGLER
GOVERNOR

EXECUTIVE ORDER
No. 1997 – 3

MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

MICHIGAN ENVIRONMENTAL SCIENCE BOARD
ENVIRONMENTAL ADMINISTRATION DIVISION

EXECUTIVE REORGANIZATION

WHEREAS, Article V, Section 2 of the Constitution of the State of Michigan of 1963 empowers the Governor to make changes in the organization of the Executive Branch or in the assignment of functions among its units which he considers necessary for efficient administration; and

WHEREAS, the Michigan Environmental Science Board was created by Executive Order 1992-19 as an independent autonomous entity within the Department of Management and Budget to provide the Governor and others within state government with scientific and technical expertise and advise on important matters relating to environmental protection and natural resource management; and

WHEREAS, the Environmental Administration Division is an administrative body created within the Department of Management and Budget to provide administrative support to the Michigan Environmental Science Board; and

WHEREAS, the Department of Management and Budget is the state department which focuses upon financial and administrative issues affecting the State of Michigan, while the Department of Environmental Quality is the state department focused upon state-wide environmental issues; and

WHEREAS, it is necessary in the interests of efficient administration and effectiveness of government to effect changes in the organization of the Executive Branch of government.

NOW, THEREFORE, I, John Engler, Governor of the State of Michigan, pursuant to the powers vested in me by the Constitution of the State of Michigan of 1963 and the laws of the State of Michigan, do hereby order the following:

1. All the authority, powers, duties, functions, and responsibilities of the

Michigan Environmental Science Board, created under Executive Order 1992-19, are hereby transferred from the Department of Management and Budget to the Department of Environmental Quality by a Type I transfer, as defined by Section 3 of Act No. 380 of the Public Acts of 1965, as amended, being Section 16.103 of the Michigan Compiled Laws.

2. All the authority, powers, duties, functions, and responsibilities of the Environmental Administration Division are hereby transferred from the Department of Management and Budget to the Department of Environmental Quality by a Type II transfer, as defined by Section 3 of Act No. 380 of the Public Acts of 1965, as amended, being Section 16.103 of the Michigan Compiled Laws.

3. All records, personnel, property and unexpended balances of appropriations, allocations and other funds used, held, employed, available or to be made available to the Michigan Environmental Science Board and the Environmental Administration Division are hereby transferred from the Department of Management and Budget to the Department of Environmental Quality.

4. The Department of Management and Budget shall determine and authorize the most efficient manner possible for handling financial transactions and records in the state's financial management system for the remainder of the fiscal year.

5. The Director of the Department of Environmental Quality shall provide executive direction and supervision for the implementation of the transfers.

6. The assigned functions of the Environmental Administration Division shall be administered under the direction and supervision of the Director of the Department of Environmental Quality, and all related prescribed functions of rulemaking, licensing and registration, including the prescription of rules, regulations, standards and adjudications, shall be transferred to the Director of the Department of Environmental Quality consistent with this Executive Order.

7. The Director of the Department of Environmental Quality may perform a duty or exercise a power conferred by law or this Order upon the Director of the Michigan Department of Environmental Quality at the time and to the extent the duty or power is delegated to the Director of the Department of Environmental Quality by law or by this Order.

8. The Director of the Department of Environmental Quality may, by written instrument, delegate a duty or a power conferred by law or this Order, and the person to whom such duty or power is so delegated may perform such duty or exercise such power at the time and to the extent that such duty or power is delegated by the Director.

9. Decisions made by the Director of the Department of Environmental Quality or persons whom the Director has lawfully delegated decision-making authority, pursuant

to this Order, shall be final when reduced to writing and delivered to all affected persons unless otherwise provided by law.

10. The Director of the Department of Environmental Quality shall make internal organizational changes as may be administratively necessary to complete the realignment of responsibilities prescribed by this Order.

11. The Directors of the Department of Environmental Quality and the Department of Management and Budget shall immediately initiate coordination to facilitate the transfers and develop a memorandum of record identifying any pending settlements, issues of compliance with applicable federal and state laws and regulations, or other obligations to be resolved by the Department of Environmental Quality.

12. All rules, orders, contracts and agreements related to the assigned functions lawfully adopted prior to the effective date of this Order shall continue to be effective until revised, amended or repealed.

13. Any suit, action, or other proceeding lawfully commenced by, against or before any entity affected by this Order shall not abate by reason of the taking effect of this Order. Any suit, action, or other proceeding may be maintained by, against or before the appropriate successor of any entity affected by this Order.

In fulfillment of the requirement of Article V, Section 2, of the Constitution of the State of Michigan of 1963, the provisions of this Executive Order shall become effective sixty (60) days after filing.

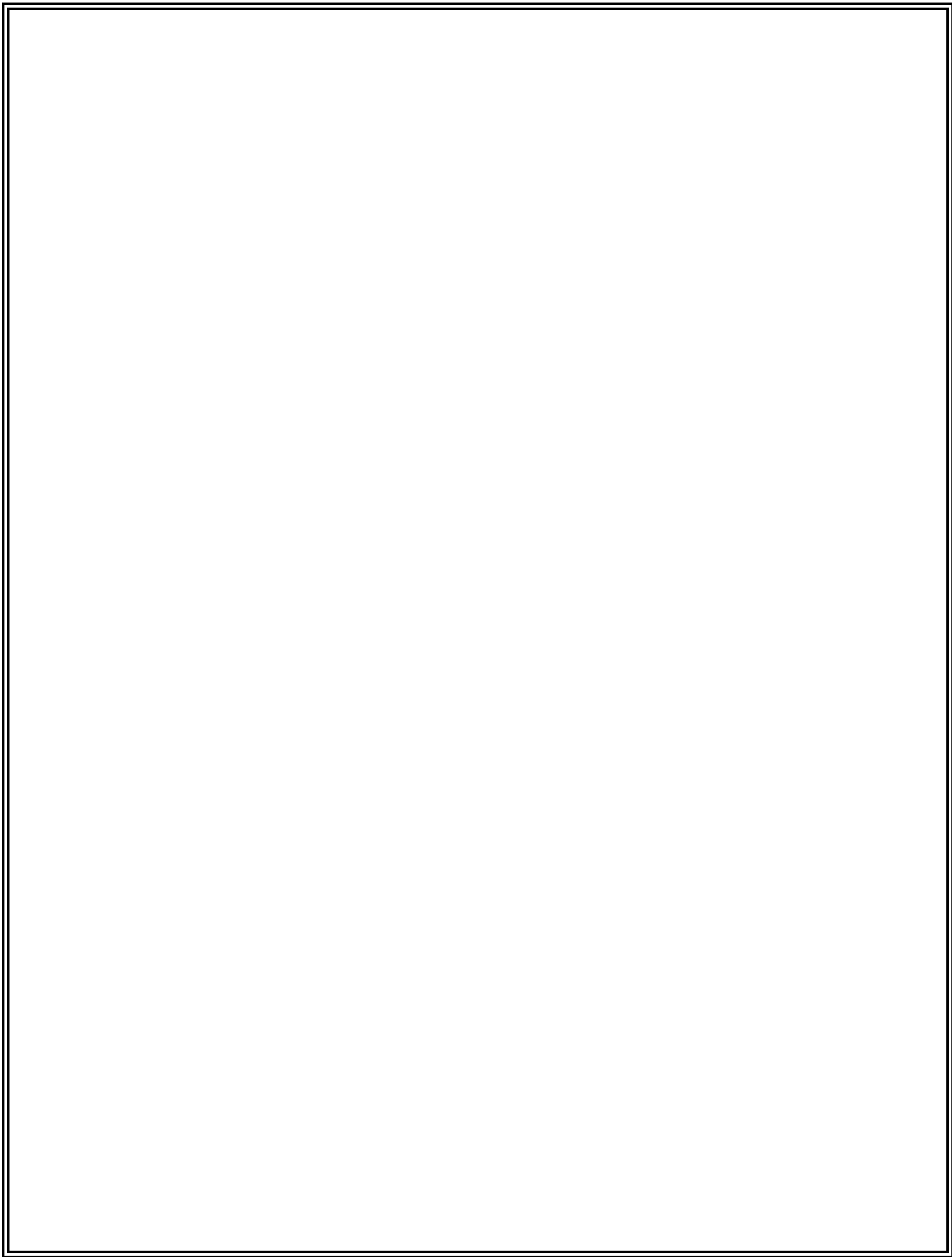


Given under my hand and the Great Seal of the State of Michigan this 14th day of March, in the Year of our Lord, One Thousand Nine Hundred Ninety-Seven.

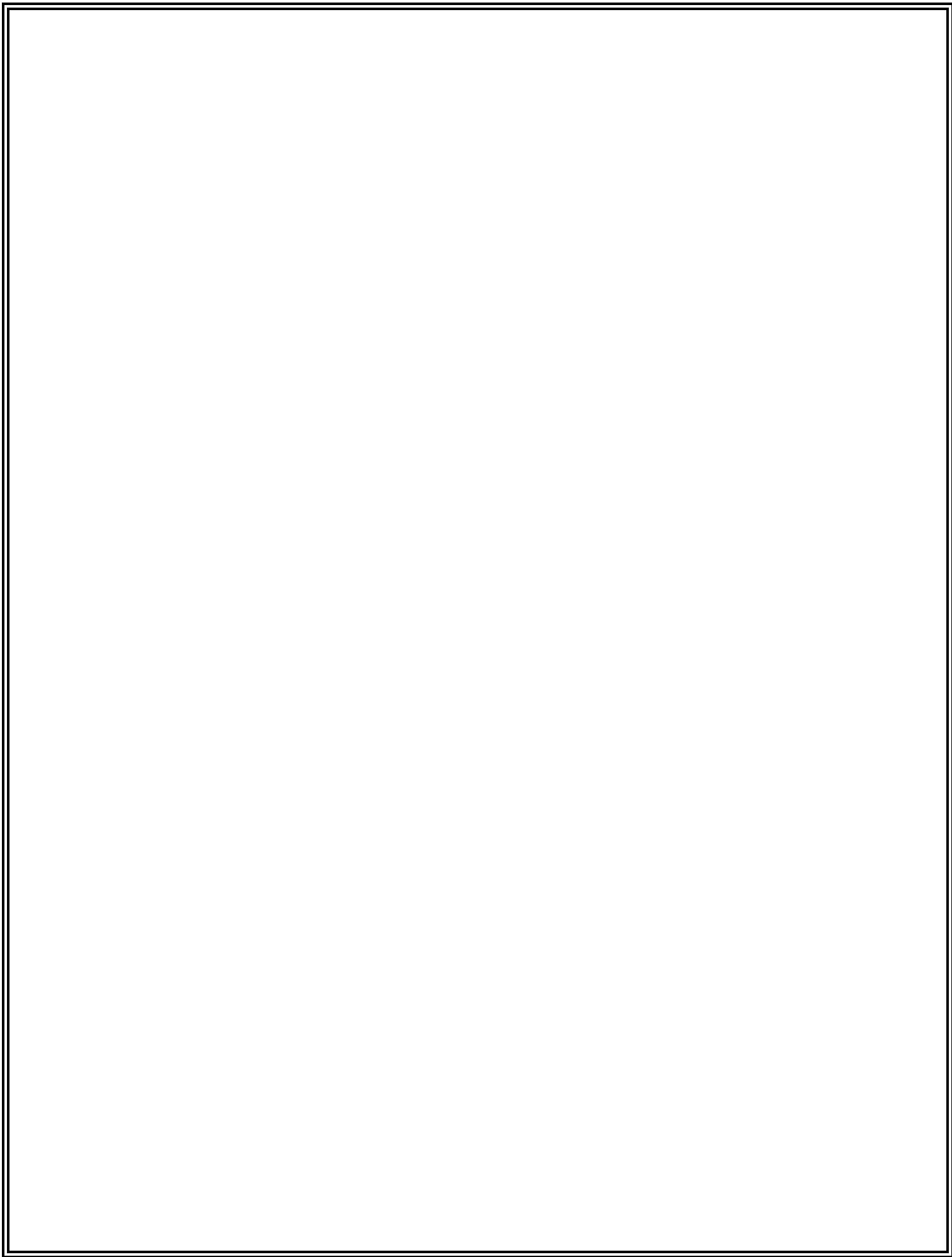
/s/ John Engler
GOVERNOR

BY THE GOVERNOR:

/s/ Candice S. Miller
SECRETARY OF STATE



Michigan Environmental Science Board
Members, Terms, Expertise, and Organization



Current MESB Members

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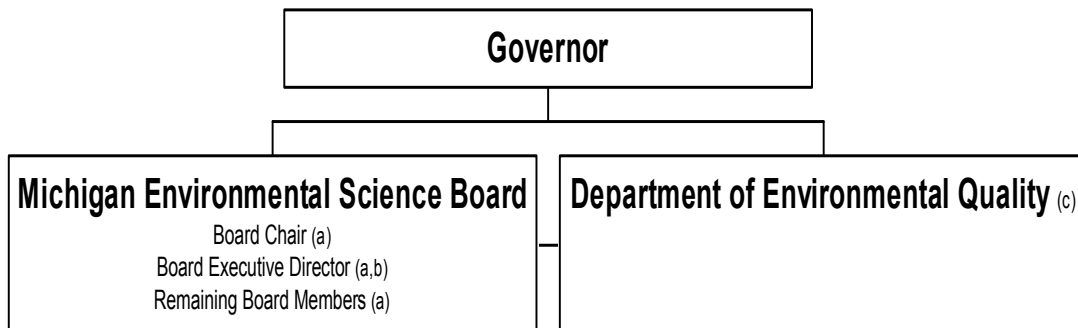
02/8/05

MESB Member Terms and Expertise

	<i>Term expires</i>
Raymond Y. Demers (Human Medicine/Cancer)	August 6, 2005
Bette J. Premo (Aquatic Ecology)	August 6, 2005
Michael J. Barcelona (Chemistry)	August 6, 2006
Nicholas Mercuro (Economics)	August 6, 2006
Joan B. Rose, Chair (Microbiology)	August 6, 2006
Gerald J. Keeler (Atmospheric Science)	August 6, 2006
Dr. Constance Boris (Engineering)	August 6, 2007
Dr. Norbert Kaminski (Toxicology/Pharmacology) ...	August 6, 2007
David T. Long (Geology)	August 6, 2007

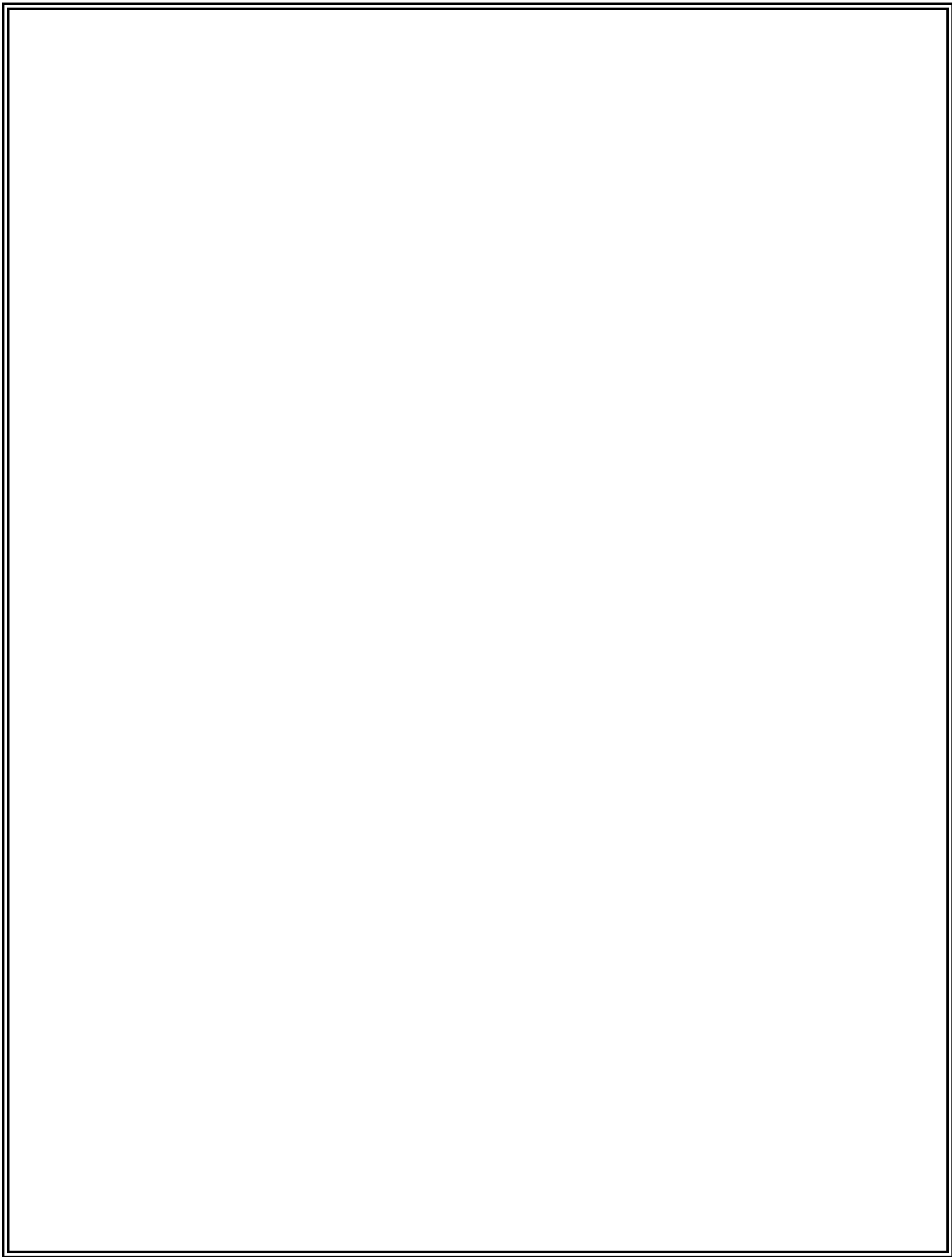
Executive Director
Keith G. Harrison (Terrestrial Ecology/Environmental Health)

MESB Organization



-
- (a) All MESB members, including its Executive Director, voluntarily serve without pay.
(b) The gubernatorial appointed MESB Executive Director position is held by a Civil Service Classified Employee.
(c) The Department of Environmental Quality provides staffing and administrative support

Michigan Environmental Science Board
Past Members and Invited Panel Guest Scientists



Past MESB Members

Dr. Jonathan W. Bulkley **(1992 – 1995)**
University of Michigan
Ann Arbor, Michigan

Dr. Richard Cook **(1992 – 1996)**
Kalamazoo College
Kalamazoo, Michigan

Dr. Lawrence J. Fischer, Chair **(1992 - 2004)**
Michigan State University
East Lansing, MI 48824

Dr. John A. Gracki **(1997 – 2003)**
Grand Valley State University
Allendale, Michigan

Dr. Ralph H. Kummier **(1996 - 2004)**
Wayne State University
Detroit, MI 48202

Dr. Ronald H. Olsen **(1992 – 2003)**
University of Michigan Medical School
Ann Arbor, Michigan

Dr. Eileen O. van Ravenswaay **(1992 – 2003)**
Michigan State University
East Lansing, Michigan

Dr. George T. Wolff **(1992 – 2003)**
General Motors Corporation
Detroit, Michigan

Past MESB Invited Panel Guest Scientists

Dr. Linda Abriola **(2001)**
University of Michigan
Ann Arbor, Michigan

Dr. Ted R. Batterson **(1999)**
Michigan State University
East Lansing, Michigan

Dr. Michael Bolger **(1995, 1997, 1998)**
U.S. Food and Drug Administration
Washington, D.C.

Dr. Gary P. Carlson **(1995, 1997)**
Purdue University
West Lafayette, Indiana

Mr. James Carey **(1996)**
University of Michigan Medical Center
Ann Arbor, Michigan

Dr. William Cooper **(1997)**
Michigan State University
East Lansing, Michigan

Dr. Michael DeVito **(2000)**
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina

Dr. Richard A. Everett **(2002)**
United States Coast Guard
Washington, D.C.

Dr. David Garabrandt **(2003)**
University of Michigan
Ann Arbor, Michigan

Dr. Harvey Hack **(2002)**
Northrop Grumman Corporation
Annapolis, Maryland

Dr. Jack R. Harkema **(1997)**
Michigan State University
East Lansing, Michigan

Dr. William Harrison **(1997)**
Western Michigan University
Kalamazoo, Michigan

Dr. Robert J. Huggett **(2001)**
Michigan State University
East Lansing, Michigan

Dr. Joseph L. Jacobson **(1995 - 1998)**
Wayne State University
Detroit, Michigan

Dr. Michael A. Kamrin **(2000, 2003)**
Michigan State University
East Lansing, Michigan

Dr. Barbara A. Knuth **(1995)**
Cornell University

Ithaca, New York

Past MESB Invited Panel Guest Scientists (Continued)

Dr. Peter F. Landrum **(2002)**
U. S. Department of Commerce, NOAA
Ann Arbor, Michigan

Dr. Clarence D. McNabb **(1999)**
Michigan State University
East Lansing, Michigan

Dr. David Morrissey **(1996)**
Michigan State University
East Lansing, Michigan

Dr. Conrad E. Nagle **(1996)**
William Beaumont Hospital
Troy, Michigan

Dr. Raymond Novak **(2003)**
Wayne State University
Detroit, Michigan

Dr. Dean Premo **(2001)**
White Water Associates, Inc.
Amasa, Michigan

Mr. Stephen C. Raaymakers **(2002)**
International Maritime Organization
London, England, United Kingdom

Dr. Martha J. Radike **(1995)**
University of Cincinnati Medical Center
Cincinnati, Ohio

Dr. Rudy J. Richardson **(2003)**
University of Michigan
Ann Arbor, Michigan

Dr. Mark A. Roberts **(1995, 1997)**
Medical College of Wisconsin
Milwaukee, Wisconsin

Dr. Ken Rosenman **(1997)**
Michigan State University
East Lansing, Michigan

Dr. Keith Solomon **(2003)**
University of Guelph
Guelph, Ontario, Canada

Mr. Gregory A. Stapleton **(2002)**
U.S. Environmental Protection Agency
Washington, D.C.

Dr. G. Marie Swanson **(1999)**
Michigan State University
East Lansing, Michigan

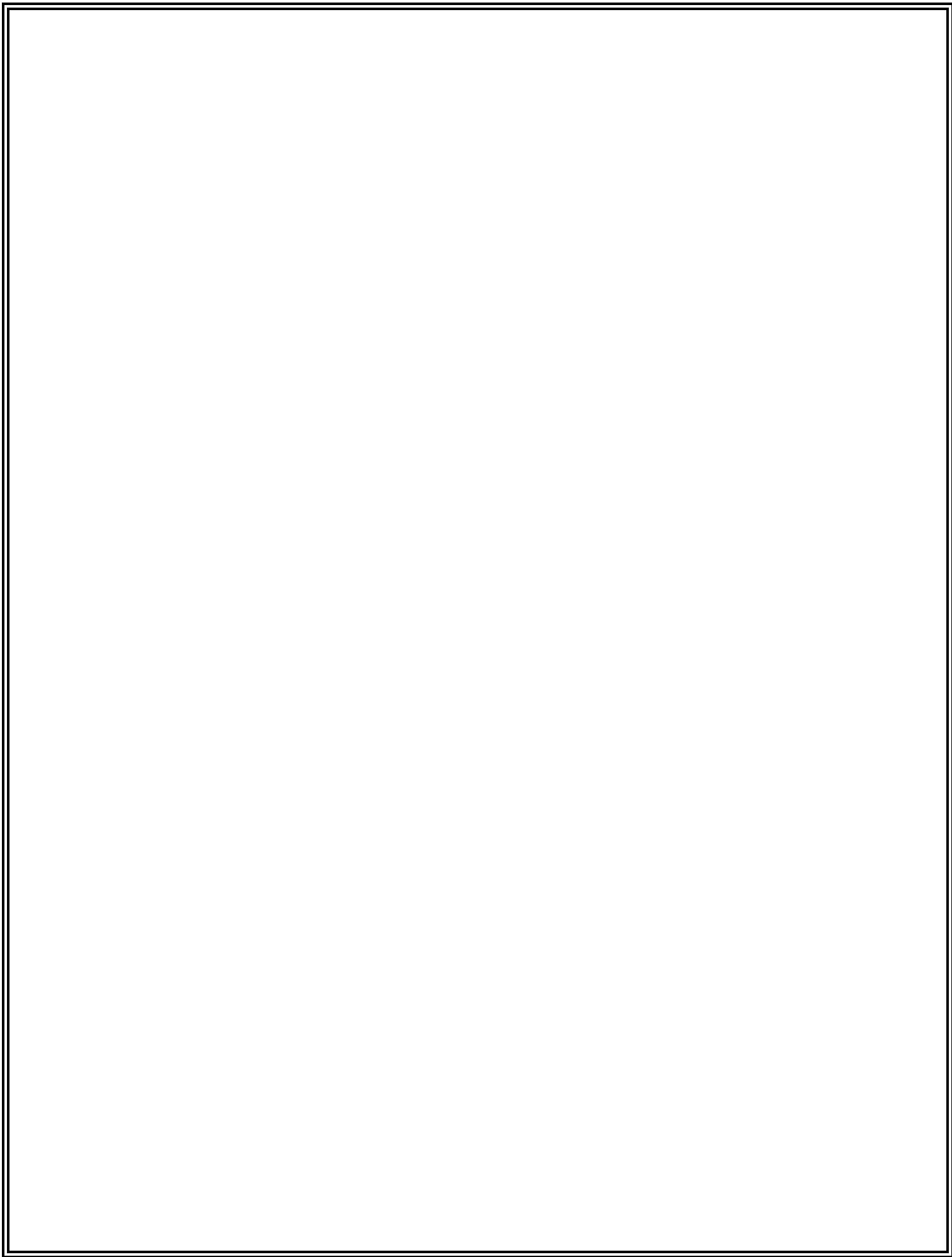
Dr. William W. Taylor **(2001)**
Michigan State University
East Lansing, Michigan

Dr. Peter T. Thomas **(1995, 1997)**
ITT Research Institute
Chicago, Illinois

Dr. Kendall B. Wallace **(1995, 1997)**
University of Minnesota
Duluth, Minnesota

Dr. William B. Weil **(2000)**
Michigan State University
East Lansing, Michigan

Michigan Environmental Science Board
Operating Procedures



**MICHIGAN ENVIRONMENTAL SCIENCE BOARD
OPERATING PROCEDURES FOR IMPLEMENTATION
OF EXECUTIVE ORDERS 1992-19 and 1997-3**

PART 1. GENERAL PROCEDURES

I. Definitions.

101. As used in these procedures:

(a) "Chairperson" means that individual appointed by the governor to serve as chairperson of the Michigan Environmental Science Board pursuant to the provisions of section 2 of Executive Order 1992-19.

(b) "DEQ" means the Michigan Department of Environmental Quality, or any successor agency.

(c) "Director" means the director of the Michigan Department of Natural Resources; or any successor agency.

(d) "DMB" means the Michigan Department of Management and Budget, or any successor agency.

(e) "DNR" means the Michigan Department of Natural Resources, or any successor agency.

(f) "Executive Director" means that individual appointed by the governor to administer the Michigan Environmental Science Board pursuant to the provisions in section 2 of Executive Order 1992-19.

(g) "Executive Order 1992-19" means Executive Order 1992-19, Michigan Environmental Science Board, dated August 6, 1992.

(h) "Executive Order 1997-3" means Executive Order 1997-3, Michigan Department of Management and Budget, Michigan Department of Environmental Quality, Michigan Environmental Science Board, Environmental Administration Division Executive Reorganization, dated March 14, 1997.

(i) "Guest Panel Members" means scientific or technical experts who are not affiliated with the Michigan Environmental Science Board but who possess relevant expertise on issues referred to the Michigan Environmental Science Board by the governor.

(j) "Member" means an individual appointed by the governor and currently serving on the Michigan Environmental Science Board.

(k) "Michigan Environmental Science Board" or "MESB" means that entity created as an independent autonomous body by Executive Order 1992-19.

(l) "Michigan Environmental Science Board Panel" or "MESB panel" means a body consisting of 1 to 9 MESB members convened by the MESB executive director pursuant to the provisions of section 4 of Executive Order 1992-19.

(m) "NRC" means the Natural Resources Commission of the DNR.

PART 2. GENERAL PROCEDURES

II. A. Applicability.

201. These procedures shall apply to the activities of the Michigan Environmental Science Board and any MESB panel convened by the MESB executive director.

II. B. Filing Requirements.

202. All notifications and documents required by these procedures or the Executive Order 1992-17 with respect to the activities of the MESB shall be mailed, postage pre-paid, to the Michigan Environmental Science Board, P. O. Box 30680, Lansing, Michigan 48909-8180; faxed to the MESB at 517-373-6492; emailed to the MESB at mesb@michigan.gov; or hand-delivered to the MESB, Constitution Hall, 525 West Allegan, Lansing, Michigan; or such other location as the MESB executive director may from time to time designate.

II. C. MESB and MESB Panel General Operation.

203. The MESB and the MESB Panels shall conduct all governor requested investigations and other charges in a sound scientific, objective and professional manner, and purposefully shall not function as a state policy body or as an advocate for or against any particular environmental or public health concern.

II. D. Additional Procedures.

204. The MESB may adopt such additional procedures as are needed to effectuate its responsibilities, consistent with the provisions of Executive Order 1992-19.

PART 3. MICHIGAN ENVIRONMENTAL SCIENCE BOARD

III. A. MESB: Creation, Membership, Term, Qualifications, Removal, Duties.

301. (1) The MESB is created as an independent autonomous agency within the DEQ pursuant to the provisions of Executive Orders 1992-19 and 1997-3.

(2) The MESB membership shall consist of 9 individuals and an executive director appointed by the governor.

(a) A member of the MESB shall serve for a term of 3 years except that of the members first appointed.

(b) Of the members first appointed, 3 shall serve for a term of 3 years, 3 shall serve for a term of 2 years and 3 shall serve for a term of 1 year.

(3) A member of the MESB shall serve at the pleasure of the governor.

(4) A member of the MESB shall have expertise in 1 or more of the following:

(a) engineering.

(b) ecological science.

- (c) economics.
- (d) chemistry.
- (e) physics.
- (f) biological sciences.
- (g) human medicine.
- (h) statistics.
- (i) risk assessment.
- (j) geology.
- (k) other disciplines as necessary.
- (5) A member of the MESB may be removed by the governor at any time, with or without cause and with or without prior notice.
- (6) The duties of the MESB are as follows:
 - (a) to advise the governor, the NRC, the DNR and other state agencies on issues affecting the protection and management of Michigan's environment and natural resources, as may be requested by the governor.
 - (b) to assist the governor in reviewing state or federal environmental impact statements and to coordinate the reviews of other state agencies.
 - (c) to review the establishment of new environmental standards for permits or operating licenses, as may be requested by the governor.
 - (d) to review the methodology for establishing permit or operating license conditions that contain environmental standards that have not been established by administrative rule, as may be requested by the governor.
 - (e) to review staff recommendations for the approval or denial of permits and license applications, as may be requested by the governor.
 - (f) to review and comment on other issues consistent with the provisions of Executive Order 1992-19, as may be requested by the governor.
- (8) In performance of its duties, the MESB may make inquiries, studies and investigations, hold hearings and receive comments from the public.

III. B. Meetings: Michigan Environmental Science Board.

302.

- (1) The MESB shall meet at the request of the governor.
- (2) Meetings of the MESB shall be held pursuant to the Public Meetings Act, Act 267 of the Public Acts of 1976, being sections 15.261 - 15.275, of the Michigan Compiled Laws and the provisions of this procedure.

(3) The MESB chairperson or, in the absence of the chairperson, another MESB member or executive director as designated by the chairperson shall preside at MESB meetings.

(4) The order of business shall include at least one provision for public comment. Persons wishing to speak before the MESB are encouraged to provide written notice of intent to speak, including a synopsis of the subject matter and to provide 10 copies of any prepared materials to the MESB not later than 1 day prior to the date of the meeting.

III. C. MESB Officers; Appointment, Duties.

303.

(1) The MESB officers shall be a chairperson and other officers appointed by the governor.

(2) The MESB officers shall serve at the pleasure of the governor.

(3) The chairperson shall be responsible for:

(a) presiding at meetings of the MESB.

(b) presiding at meetings of MESB panels.

(c) selecting from among the MESB members, those to serve on a panel.

(d) ensuring the conduct of the scientific inquiry and development of the findings, comments or recommendations on issues referred to the MESB by the governor.

(e) designating an alternate to preside at MESB or MESB panel meetings in the absence of the MESB chairperson.

(f) others duties consistent with the provisions of Executive Order 1992-19.

III. D. MESB Executive Director; Appointment, Duties.

304.

(1) The MESB executive director shall be appointed by the governor.

(2) The duties of the MESB executive director shall include:

(a) convening, at the governor's request, a MESB panel composed of members of the MESB, and other guest panel members as appropriate, with relevant expertise to provide findings, comments and/or recommendations on issues referred to the MESB pursuant to part 301(6) of these guidelines.

(b) arranging for and providing staff support to the MESB and MESB panels, as needed.

(c) arranging for scientific and/or technical experts who are not affiliated with the MESB to assist the MESB and MESB panels, either as expert speakers or guest panel members, in their various deliberations.

(d) arranging for information, documentation, and staff testimony, as needed, from the DNR and other state agencies to assist the MESB and MESB panels in their various deliberations.

(e) transmitting the findings, comments, and/or recommendations of the MESB and MESB panels to the governor and other individuals at the governor's direction.

(f) coordinating the review of state and federal environmental impact statements by other state agencies as requested by the governor.

(g) other duties consistent with the provisions of Executive Order 1992-19.

PART 4. MICHIGAN ENVIRONMENTAL SCIENCE BOARD PANELS

IV. A. MESB Panels: Creation, Membership, Qualifications, Duties.

401.

(1) At the request of the governor, a MESB panel shall be convened by the MESB executive director.

(2) A MESB panel shall consist of 1 to 9 MESB members and the MESB executive director.

(3) MESB panel membership shall be based upon the relevant expertise of the MESB member to a particular issue referred to the MESB by the governor.

(4) MESB panels may include additional scientific or technical experts as guest panel members who are not affiliated with the MESB but who possess relevant expertise on a particular issue referred to the MESB by the governor.

(5) MESB panels shall have the following duties:

(a) review and provide recommendations on particular issues referred to the MESB by the governor.

(b) review and provide comments on environmental impact statements referred to the MESB by the governor.

(c) review and provide comments on proposed or existing environmental standards for permits and operating licenses referred to the MESB by the governor.

(i) the scope of the review shall include, but not be limited to the following factors:

(A) sound, objective, scientific reasoning.

(B) relative risk to human health and to the environment.

(C) economic reasonableness, where appropriate.

(ii) the review called for in subpart (c) of this procedure shall be conducted concurrently with any rule-making proceeding and shall not unnecessarily delay such proceeding.

(d) review and provide comments on the procedure, referred to the MESB by the governor, for establishing permit or operating license conditions that contain

environmental standards that have not been established by rule. The scope of the review shall include, but not be limited to the following factors:

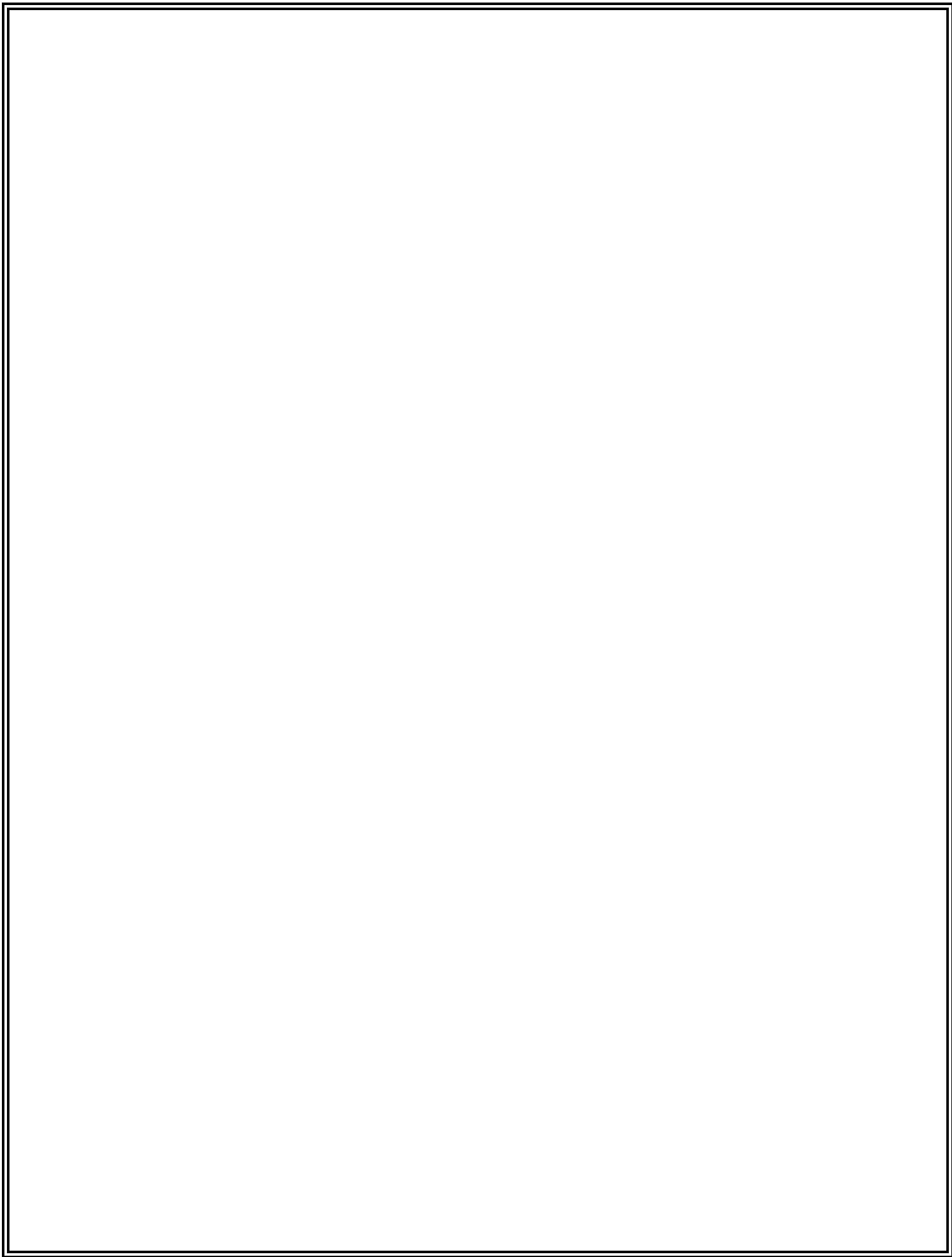
- (i) sound, objective scientific reasoning.
 - (ii) relative risk to human health and to the environment.
 - (iii) economic reasonableness, where appropriate.
- (e) review and provide comments on staff recommendations, referred to the MESB by the governor, for denial or approval of permit and license applications. The scope of the review shall include, but not be limited to the following factors:
- (i) sound, objective, scientific reasoning.
 - (ii) relative risk to human health and to the environment.
 - (iii) economic reasonableness, where appropriate.
- (f) review and provide comments on other issues consistent with the provisions of Executive Order 1992-19, as may be requested by the governor.
- (6) In the performance of its duties, MESB panels may make inquiries, studies and investigations, hold hearings and receive comments from the public.

IV. B. Meetings: Michigan Environmental Science Board Panels.

402.

- (1) Meetings of MESB panels shall be held pursuant to the Open Meetings Act, Act 267 of the Public Acts of 1976, being sections 15.261 to 15.275 of the Michigan Compiled Laws and the provisions of this procedure.
- (2) A majority of MESB and guest panel members selected to serve on a MESB panel, and the executive director shall be required to be present to convene a MESB panel meeting.
- (3) The MESB chairperson or, in the absence of the MESB chairperson, a MESB member or the MESB executive director, as designated by the MESB chairperson, shall preside at a MESB panel meeting.
- (4) The order of business for MESB panel meetings shall include at least one provision for public comment. Persons wishing to speak before the MESB are encouraged to provide written notice of intent to speak, including a synopsis of the subject matter and to provide 10 copies of any prepared materials to the MESB not later than 1 day prior to the date of the meeting.

Michigan Environmental Science Board
Publications List



Investigative Reports

- Demers, R.Y., D. Garabrandt, M.A. Kamrin, R. Novak, R.J. Richardson, K. Solomon and K.G. Harrison. 2003. ***Critical Review of a Proposed List of Toxic Substances to Biomonitor in Michigan Residents***, July 2003. Michigan Environmental Science Board, Lansing. x + 28p.
- Gracki, J.A., R.A. Everett, H. Hack, P.F. Landrum, D.T. Long, B.J. Premo, S.C. Raaymakers, G.A. Stapleton and K.G. Harrison. 2002. ***Critical Review of a Ballast Water Biocides Treatment Demonstration Project Using Copper and Sodium Hypochlorite***, September 2002. Michigan Environmental Science Board, Lansing. xii + 30p.
- Premo, B.J., D.T. Long, R.J. Huggett, D. Premo, W.W. Taylor, G.T. Wolff and K.G. Harrison. 2001. ***Recommended Environmental Indicators Program for the State of Michigan***, July 2001. Michigan Environmental Science Board, Lansing. x + 88p.
- Fischer, L.J., L. Abriola, R.H. Kummier, D.T. Long, and K.G. Harrison. 2001. ***Evaluation of the Michigan Department of Environmental Quality's Generic Groundwater and Soil Volatilization to Indoor Air Inhalation Criteria***, April 2001. Michigan Environmental Science Board, Lansing. x + 54p.
- Fischer, L.J., J.A. Gracki, D.T. Long, G.T. Wolff and K.G. Harrison. 2000. ***Health Effects of Low-Level Hydrogen Sulfide in Ambient Air***, August 2000. Michigan Environmental Science Board, Lansing. x + 30p.
- Gracki, J.A., M. DeVito, R.A. Etzel, M.A. Kamrin, W.B. Weil, G.T. Wolff and K.G. Harrison. 2000. ***Analysis of the Michigan Department of Environmental Quality's Administered Environmental Standards to Protect Children's Health***, February 2000. Michigan Environmental Science Board, Lansing. x + 66p.
- Premo, B.J., T.R. Batterson, J.A. Gracki, C.D. McNabb and K.G. Harrison. 1999. ***Evaluation of the Use of Sonar® in Michigan***, October 1999. Michigan Environmental Science Board, Lansing. x + 97p.
- Fischer, L.J., R.Y. Demers, R.H. Kummier, G.M. Swanson and K.G. Harrison. 1999. ***Evaluation of the Risk of Cancer among Fire Fighters***, June 1999. Michigan Environmental Science Board, Lansing, Michigan. 31p.
- Fischer, L.J., P.M. Bolger, J.L. Jacobson, B.J. Premo, E.O. van Ravenswaay and K.G. Harrison. 1998. ***Evaluation of Michigan's Proposed 1998 Fish Advisory Program***, January 1998. Michigan Environmental Science Board, Lansing. vi + 67p.
- Long, D.T., W.E. Cooper, W.B. Harrison III, R.H. Olsen, B.J. Premo and K.G. Harrison. 1997. ***Evaluation of Directional Drilling under the Great Lakes***, October 1997. Michigan Environmental Science Board, Lansing. 8p.
- Fischer, L.J., R.Y. Demers, J. R. Harkema, R.H. Kummier, K.R. Rosenman, G.T. Wolff and K.G. Harrison. 1997. ***Evaluation of Air Quality and Human Health Issues Involving Particulate Matter and Ozone***, August 1997. Michigan Environmental Science Board, Lansing. xii + 82p.
- Fischer, L.J., P.M. Bolger, G.P. Carlson, J.L. Jacobson, M.A. Roberts, P.T. Thomas, K.B. Wallace and K.G. Harrison. 1997. ***(Impact of New PCB Information on 1995 MESB-Council of Great Lakes Governors Special Fish Advisory Report), Correspondence to Governor John Engler***, January 21, 1997. Michigan Environmental Science Board, Lansing. 10p.

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- Premo, B.J., J.E. Carey, L.J. Fischer, D.T. Long, D.J. Morrissey, C.E. Nagle and K.G. Harrison. 1996. ***Evaluation of Michigan's Low-Level Radioactive Waste Isolation Facility Siting Criteria***, June 1996. Michigan Environmental Science Board, Lansing. xiv + 94p.
- Fischer, L.J., P.M. Bolger, G.P. Carlson, J.L. Jacobson, B.A. Knuth, M.J. Radike, M.A. Roberts, P.T. Thomas, K.B. Wallace and K.G. Harrison. 1995. ***Critical Review of a Proposed Uniform Great Lakes Fish Advisory Protocol***, September 1995. Michigan Environmental Science Board, Lansing. xii + 62p.
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- Olsen, R.H., B.J. Premo and K.G. Harrison. 1994. ***(Report on Bacteriological and Macrophyte Contamination of Lake St. Clair), Correspondence to Governor John Engler***, August 26, 1994. Michigan Environmental Science Board, Lansing. 2p.
- Fischer, L.J., R.J. Cook, R.Y. Demers, B.J. Premo, E.O. van Ravenswaay and K.G. Harrison. 1994. ***Impacts of Chlorine Use on Environmental and Public Health***, June 1994. Michigan Environmental Science Board, Lansing. x + 67p.
- Fischer, L.J., J.W. Bulkley, R.J. Cook, R.Y. Demers, D.T. Long, R.H. Olsen, B.J. Premo, E.O. van Ravenswaay, G.T. Wolff and K.G. Harrison. 1993. ***Mercury in Michigan's Environment: Environmental and Human Health Concerns***, April 1993. Michigan Environmental Science Board, Lansing. xii + 144p.

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- Harrison, K.G. 2001. ***Michigan Environmental Science Board Reprint Reference Library by Report and Author***, July 2001. Michigan Environmental Science Board, Lansing. viii + 174p.

Panel Meeting Summaries

2002. ***MESB Ballast Water Biocides Panel Meeting Summary, Wednesday, May 29, 2002***. Michigan Environmental Science Board, Lansing. 11p.
2000. ***MESB Environmental Indicators Panel Meeting Summary, Thursday, July 20, 2000***. Michigan Environmental Science Board, Lansing. 8p.
2000. ***MESB Indoor Air Inhalation Panel Meeting Summary, Tuesday June 19, 2000***. Michigan Environmental Science Board, Lansing. 5p.
2000. ***MESB Indoor Air Inhalation Panel Meeting Summary, Thursday, May 4, 2000***. Michigan Environmental Science Board, Lansing. 8p.
2000. ***MESB Indoor Air Inhalation Panel Meeting Summary, Thursday, March 30, 2000***. Michigan Environmental Science Board, Lansing. 6p.

Panel Meeting Summaries (continued)

2000. *MESB Hydrogen Sulfide Panel Meeting Summary, Tuesday, March 28, 2000.* Michigan Environmental Science Board, Lansing. 4p.
2000. *MESB Indoor Air Inhalation Panel Meeting Summary, Wednesday, February 2, 2000.* Michigan Environmental Science Board, Lansing. 11p.
1999. *MESB Children's Standards Panel Meeting Summary, Wednesday, June 16, 1999.* Michigan Environmental Science Board, Lansing. 3p.
1999. *MESB Children's Standards Panel Meeting Summary, Thursday, April 29, 1999.* Michigan Environmental Science Board, Lansing. 3p.
1999. *MESB Children's Standards Panel Meeting Summary, Wednesday, March 31, 1999.* Michigan Environmental Science Board, Lansing. 6p.
1999. *MESB Fire Fighters and Cancer Panel Meeting Summary, Thursday, March 4, 1999.* Michigan Environmental Science Board, Lansing. 6p.
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1998. *MESB Fire Fighters and Cancer Panel Meeting Summary, Monday, October 26, 1998.* Michigan Environmental Science Board, Lansing. 8p.
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Panel Meeting Summaries (continued)

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1996. *MESB Low Level Radioactive Waste Panel Meeting Summary, Tuesday, February 20, 1996.* Michigan Environmental Science Board, Lansing. 21p.
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1995. *MESB-Council of Great Lakes Governors Special Fish Advisory Panel Meeting Summary, Friday, April 7, 1995.* Michigan Environmental Science Board, Lansing. 11p.
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1994. *MESB-Council of Great Lakes Governors Special Fish Advisory Panel Meeting Summary, Wednesday, November 30, 1994.* Michigan Environmental Science Board, Lansing. 15p.
1994. *MESB-Council of Great Lakes Governors Special Fish Advisory Panel Meeting Summary, Friday, October 28, 1994.* Michigan Environmental Science Board, Lansing. 13p.
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1994. *MESB Lead Panel Meeting Summary, Monday, April 11, 1994.* Michigan Environmental Science Board, Lansing. 43p.
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Panel Meeting Summaries (continued)

1994. *MESB Chlorine Panel Meeting Summary, Thursday, March 3, 1994.* Michigan Environmental Science Board, Lansing. 13p.
1994. *MESB Chlorine Panel Meeting Summary, Wednesday, February 9, 1994.* Michigan Environmental Science Board Lansing. 44p.
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1993. *MESB Mercury Panel Meeting Summary, Tuesday, January 26, 1993.* Michigan Environmental Science Board, Lansing. 15p.
1992. *MESB Mercury Panel Meeting Summary, Monday, December 14, 1992.* Michigan Environmental Science Board, Lansing. 19p.
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